

IN THE CLAIMS:

Claim 1 (Withdrawn) A bottom-gate thin-film transistor comprising a gate electrode, a gate insulating film, an active layer, and a protective insulating film deposited in that order on a substrate,

wherein the protective insulating film has a thickness of 100 nm or less, and the protective insulating film is formed on any one of the active layer, an LDD region, and a source-drain region.

Claim 2 (Withdrawn) A bottom-gate thin-film transistor according to Claim 1, wherein the active layer comprises a polysilicon film.

Claim 3 (Withdrawn) A bottom-gate thin-film transistor according to either Claim 1 or 2, wherein the protective insulating film has a thickness of 5 to 50 nm.

Claim 4 (Currently amended) A method of making a bottom-gate thin-film transistor comprising:

forming a gate electrode on a substrate;

forming a gate insulating film on the gate electrode;

forming a laminate on said gate insulating film, comprising:

forming a precursor film for an active layer, and

forming a protective insulating film directly on and in physical contact with said precursor film without using an etching process, the protective insulating film having a thickness of 100 nm or less;

implanting a dopant when forming one of an LDD region and a source-drain region of the precursor film for the active layer through the protective insulating film without etching said protective insulating film; and

activating the implanted dopant so that a non-doped portion comprises the active layer; and

forming an interlayer insulating film on the protective insulating film.

Claim 5 (Previously presented) The method of making a bottom-gate thin-film transistor according to Claim 4, wherein the active layer comprises a polysilicon film.

Claim 6 (Previously presented) The method of making a bottom-gate thin-film transistor according to Claim 5, wherein, in the laminate forming step, an amorphous silicon film is formed on the gate insulating film, the amorphous silicon film is crystallized to form the polysilicon film, and the protective insulating film is formed on the polysilicon film.

Claim 7 (Previously presented) The method of making a bottom-gate thin-film transistor according to Claim 5, wherein, in the laminate forming step, an amorphous silicon film is formed on the gate insulating film, the protective insulating film is continuously formed on the amorphous silicon film, and then the amorphous silicon film is crystallized to form the polysilicon film.

Claim 8 (Currently amended) A method of making a bottom-gate thin-film transistor comprising:

forming a gate electrode on a substrate;

forming a gate insulating film on the gate electrode;

forming a laminate on the gate insulating film comprising:

forming a precursor film for an active layer, and

forming a protective insulating film directly on and in physical contact with the gate-insulating precursor film, the protective insulating film having a thickness of 100 nm or less;

implanting a dopant in one of an LDD region and a source-drain region of the precursor film for the active layer through the protective insulating film without etching the protective insulating film; and

activating the implanted dopant so that a non-doped portion comprises the active layer;

wherein, in the laminate forming step, an amorphous silicon film is formed on the gate insulating film, the protective insulating film is formed on a surface of the amorphous silicon film by surface oxidation of the amorphous silicon film, and then the amorphous silicon film is crystallized to form the polysilicon film.

Claim 9 (Previously presented) A method of making a bottom-gate thin-film transistor according to Claim 4, wherein, subsequent to the dopant implanting step, defects formed in the protective insulating film are recovered.

Claim 10 (Withdrawn) A liquid crystal display device comprising:
a TFT substrate comprising an interlayer insulating film, a transparent electrode, and an alignment layer formed on a protective insulating film of a bottom-gate thin-film transistor according to any one of Claims 1 to 3;
a counter substrate provided with a counter electrode; and
a liquid crystal interposed between the TFT substrate and the counter substrate.

Claim 11 (Previously presented) A method of fabricating a liquid crystal display device comprising:

making a bottom-gate thin-film transistor by a method according to any one of Claims 4 to 9;
forming an interlayer insulating film, a transparent electrode, and an alignment layer on a protective insulating film of the bottom-gate thin-film transistor to comprise a TFT substrate; and
interposing a liquid crystal between the TFT substrate and a counter substrate provided with a counter electrode.

Claim 12 (Withdrawn) An organic EL device comprising:
a bottom-gate thin-film transistor according to any one of Claims 1 to 3; and
an organic EL element driven by the bottom-gate thin-film transistor.

Claim 13 (Previously presented) A method of fabricating an organic EL device comprising:
making a bottom-gate thin-film transistor by a method according to any one of Claims 4 to 9;
forming an interlayer insulating film on a protective insulating film of the bottom-gate thin-film transistor; and

forming an organic EL element driven by the bottom-gate thin-film transistor on the interlayer insulating film.

Claim 14 (Canceled)